Addenda to the Bean Creek, Luna Pier, Raisin River, and South Branch Raisin River
E. coli Total Maximum Daily Loads (TMDL)
Addendum - 2022
Impaired Water Bodies and Percent Reductions

These addenda contain water bodies that are not meeting the Total Body Contact (TBC) Designated Use based on recent data as described in the Assessment Methodology Section of the 2022 Integrated Report. The assessment units in these addenda are spatially contained in the TMDL watersheds, or source areas, of previous United States Environmental Protection Agency (USEPA) approved TMDLs. A TMDL watershed is defined as the area of land that contributes drainage, and therefore pollution, to an impaired water. Maps of the TMDL watersheds can be viewed in the original TMDL documents, accessible through Michigan.gov/TMDL, and through the Michigan Department of Environment, Great Lakes, and Energy's (EGLE) Interactive Maps (Michigan.gov/EcoliTMDL). The Load Allocation (LA) and Waste Load Allocation (WLA) applies to sources within the corresponding TMDL watersheds.

Consistent with the approved TMDLs, the loading capacities (LAs and WLAs) for the additional waters under the *E. coli* TMDLs are equal to the *E. coli* water quality standard (WQS) (130 *E. coli* per 100 milliliters (mL) geometric mean and not to exceed 300 *E. coli* per 100 mL for TBC recreation; and not to exceed 1,000 *E. coli* per 100 mL for partial body contact (PBC) recreation). These *E. coli* TMDL allocations, expressed as concentrations, are applicable across all flow and critical conditions. The WLA applies to every permitted bacteria discharger impacting the impaired assessment units. Please consult the referenced TMDL document for information about the Loading Capacity, Source Assessment, and Reasonable Assurance for point and nonpoint sources.

For each water body in the attached table, the ultimate water quality goal is to meet the requirements for removal from the Section 303(d) list contained in the Assessment Methodology Section of the most recently approved Integrated Report. The data summarized for each water body include all sample results that are readily available and may not contain the exact dataset that was used in making the initial impairment decision (pursuant to the assessment methodology at the time the decision was made). The information in columns 3-12 of this addendum is provided for informational purposes only, to assist stakeholders in determining the magnitude of the problem in their water body.

In order to give stakeholders an overview of the water quality in the impaired waters, the attached table provides the following:

Column 1 - Assessment Unit Identifier (AUID) - Michigan uses the National Hydrography Dataset to organize and identify water bodies for the Section 303(d) and 305(b) lists. A base assessment unit is a 12-digit hydrologic unit code (HUC), which may be split further into smaller assessment units depending on information such as land use, known areas of contamination, specific fish consumption advisories, physical barriers such as dams, etc. Each assessment unit is assigned a numeric identifier (AUID) and may consist of all water bodies in a 12-digit HUC (as a maximum) or specific stream segments or lakes located in that HUC. AUIDs may also be lakes or

points, such as in the case of clearly defined and monitored bathing beaches or public water supply intakes.

Column 2 - Water Body Type - AUIDs can be public access points (beaches or boat launches), rivers, streams, lakes, public water supply intakes, or shorelines.

Column 3 - n (number) - Number of daily geometric means that were used in the calculation of Column 4 (geometric mean of all data in each AUID). The data for all sites in an AUID are combined for the total number of daily geometric means.

Column 4 - Geometric mean of all *E. coli* data in each AUID (river segment, lake, or beach). Geometric mean of all available data within the AUID. This value is used for calculating column 5 (percent reduction) for informational purposes only but is not used in evaluating attainment status for assessment purposes. This number cannot be compared to the daily or 30-day WQS, since it contains data from more than one day and potentially more than one 30-day period. Data are only included if they meet the criteria of three or more individual samples during the same sampling event.

Column 5 - Percent Reduction - This value, provided for informational purposes, represents the amount of reduction that would be necessary for the geometric mean of all data (Column 4) to reach the 300 *E. coli* per 100 milliliters (mL) daily threshold. Attaining this reduction does not necessarily mean that the water body will be removed from the TMDL. The assessment methodology contained in the most recently approved Integrated Report determines the criteria for removal of a water body from the impairment status. In some cases, the percent reduction is not provided because the geometric mean in Column 4 was less than the 300 *E. coli* per 100 mL daily threshold. In all cases, the water quality goal is to meet the threshold for removal of the impairment following the Assessment Methodology Section of the most recently approved Integrated Report.

Column 6 - Number of 30-Day Geometric Means - Number of 30-day geometric means that were calculated and used in the calculation of the Percent 30-Day Total Body Contact (TBC) Exceedance (Column 7). If 30-day geometric means were not calculated when the data were submitted to the Michigan Department of Environment, Great Lakes, and Energy (EGLE), then this value may be 0.

Column 7 - Percent 30-Day TBC Exceedance - Percent of available 30-day geometric means (Column 6) that are exceeding the threshold of 130 *E. coli* per 100 mL. If only one 30-day geometric mean is available, this value will be 0 or 100 percent.

Column 8 - Percent Daily TBC Exceedances - Percent of daily geometric means (“n,” Column 3) that exceed the 300 *E. coli* per 100 mL threshold.

Column 9 - Percent Partial Body Contact Exceedance - Percent of daily geometric means (“n,” Column 3), that exceed the 1,000 *E. coli* per 100 mL threshold.

Column 10 - Interstate Waters - Inland waters that flow directly in or out of Michigan, from other states, are flagged with the direction of flow and the state involved; for example, waters marked “From Indiana” leave Indiana and enter Michigan. Waters are only flagged if EGLE has evidence of an impairment that extends to our border.

Column 11 - Code - This column contains notes that are unique to the water body:

Data1: The summary for this water body is based on a small dataset (n < 5) but is supported by a larger dataset (n > 5) from a nearby contiguous and comparable AUID.

Data2: The summary for this water body is based on contiguous up or downstream AUID(s) with consistent land use patterns (n > 5).

Declining (Water Quality): These water bodies, typically beaches, have large datasets where older data show few exceedances of the WQS, but newer data show an impairment according to the most current Assessment Methodology in the Integrated Report.

Raw Sewage: Water bodies are listed as impaired based on the presence of raw sewage in surface water.

Reissue: This water body is already in a United States Environmental Protection Agency (USEPA) approved *E. coli* TMDL, and that TMDL is being revoked and reissued. Once this TMDL Addenda is approved by the USEPA, this water body will be part of the statewide TMDL.

Restored: This water body has recent data sufficient to categorize it as 'fully attaining' the applicable WQS (using the criteria for removal of the impairment in the Assessment Methodology Section); however, they remain protected by the TMDL.

Column 12 - Year First Listed - This column contains the Integrated Reporting cycle year where the waterbody was first listed as not attaining the TBC designated use. Each biennial submittal of the Integrated Report contains a description and guidance on data requirements to list an AUID as impaired.

2022 Addenda to Concentration-Based *E. coli* Total Maximum Daily Loads (TMDLs)

Bean Creek TMDL

Column 1: Assessment Unit (AUID)	Column 2: Waterbody Type	Column 3: Number of Events	Column 4: AUID E. coli Geometric Mean	Column 5: % Reduction	Column 6: # of 30-Day Geometric Means	Column 7: % 30-day TBC Exceedance	Column 8: % Daily TBC Exceedance	Column 9: % Daily PBC Exceedance	Column 10: Interstate Waters	Column 11: Code	Column 12: Year 1st Listed
Watershed	04100006	Tiffin									
Subwatershed	041000060104	St. Joseph Creek-Bean Creek									
041000060104-01	River	10	793	62%	2	100%	90%	40%			2022

Lake Erie/Luna Pier Beach TMDL

Column 1: Assessment Unit (AUID)	Column 2: Waterbody Type	Column 3: Number of Events	Column 4: AUID E. coli Geometric Mean	Column 5: % Reduction	Column 6: # of 30-Day Geometric Means	Column 7: % 30-day TBC Exceedance	Column 8: % Daily TBC Exceedance	Column 9: % Daily PBC Exceedance	Column 10: Interstate Waters	Column 11: Code	Column 12: Year 1st Listed
Watershed	04100001	Ottawa-Stony									
Subwatershed	041000010202	La Plaisance Creek-Frontal Lake Erie									
041000010202-03	River	5	212		1	100%	0%	0%			2022

River Raisin TMDL

Column 1: Assessment Unit (AUID)	Column 2: Waterbody Type	Column 3: Number of Events	Column 4: AUID E. coli Geometric Mean	Column 5: % Reduction	Column 6: # of 30-Day Geometric Means	Column 7: % 30-day TBC Exceedance	Column 8: % Daily TBC Exceedance	Column 9: % Daily PBC Exceedance	Column 10: Interstate Waters	Column 11: Code	Column 12: Year 1st Listed
Watershed	04100002	Raisin									
Subwatershed	041000020310	Dunlap Drain-River Raisin									
041000020310-02	River	5	156		1	100%	0%	0%			2022

South Branch River Raisin TMDL

Column 1: Assessment Unit (AUID)	Column 2: Waterbody Type	Column 3: Number of Events	Column 4: AUID E. coli Geometric Mean	Column 5: % Reduction	Column 6: # of 30-Day Geometric Means	Column 7: % 30-day TBC Exceedance	Column 8: % Daily TBC Exceedance	Column 9: % Daily PBC Exceedance	Column 10: Interstate Waters	Column 11: Code	Column 12: Year 1st Listed
Watershed	04100002	Raisin									
Subwatershed	041000020204	Wolf Creek									
041000020204-05	River	46	464	35%	2	100%	65%	39%			2020
041000020204-07	River	14	289		1	100%	50%	7%			2020